

CLAIMS

1. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme  
5 Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that  
the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a  
10 pretreatment and  
extracted liquid as an analytical sample is analyzed.
2. An analysis method for coenzyme Q-10 and a  
15 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that  
the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is  
20 extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment and  
extracted liquid as an analytical sample is analyzed.
- 25 3. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that  
the specimen comprising at least one of the  
30 coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment,  
extracted liquid as an analytical sample is

analyzed, and

the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is  
5 analyzed.

4. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a  
10 specimen, characterized in that

the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment,

15 extracted liquid as an analytical sample is analyzed, and

the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is  
20 analyzed.

5. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a  
25 specimen, characterized in that

the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment,

30 extracted liquid as an analytical sample is analyzed, and

a preparatory treatment for condensing the analytical sample according to a column switching method

is performed.

6. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment, extracted liquid as an analytical sample is analyzed, and a preparatory treatment for condensing the analytical sample according to a column switching method is performed.

7. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment, extracted liquid as an analytical sample is analyzed, the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is analyzed, and a preparatory treatment for condensing the analytical sample according to a column switching method is performed.

8. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that

the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment,  
extracted liquid as an analytical sample is analyzed,

the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is analyzed, and

a preparatory treatment for condensing the analytical sample according to a column switching method is performed.

9. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that

the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment,

extracted liquid as an analytical sample is analyzed,

extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

the coenzyme Q-10 and the 2-electron reduced

form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a detector.

5                   10. An analysis method for coenzyme Q-10 and a  
2-electron reduced form thereof which quantifies coenzyme  
Q-10 and a 2-electron reduced form thereof comprised in a  
specimen, characterized in that  
the specimen comprising at least one of the  
10 coenzyme Q-10 and the 2-electron reduced form thereof is  
extracted with a water-soluble organic solvent comprising  
isopropyl alcohol as a pretreatment,  
extracted liquid as an analytical sample is  
analyzed,  
15 extracted liquid from a specimen comprising both  
the coenzyme Q-10 and the 2-electron reduced form thereof  
is the analytical sample, and  
the coenzyme Q-10 and the 2-electron reduced  
form thereof are separated by a column, further subjected  
20 to reduction treatment, and subsequently detected by a  
detector.

11. An analysis method for coenzyme Q-10 and a  
2-electron reduced form thereof which quantifies coenzyme  
25 Q-10 and a 2-electron reduced form thereof comprised in a  
specimen, characterized in that  
the specimen comprising at least one of the  
coenzyme Q-10 and the 2-electron reduced form thereof is  
extracted with a water-soluble organic solvent as a  
30 pretreatment,  
extracted liquid as an analytical sample is  
analyzed,  
the extracted liquid is stored at a temperature

within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is analyzed,

5        extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

      the coenzyme Q-10 and the 2-electron reduced form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a  
10    detector.

12. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a  
15    specimen, characterized in that

      the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment,

20        extracted liquid as an analytical sample is analyzed,

      the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is  
25    analyzed,

      extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

      the coenzyme Q-10 and the 2-electron reduced  
30    form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a detector.

13. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that

5           the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment,

                  extracted liquid as an analytical sample is  
10 analyzed,

                  a preparatory treatment for condensing the analytical sample according to a column switching method is performed,

                  extracted liquid from a specimen comprising both  
15 the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

                  the coenzyme Q-10 and the 2-electron reduced form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a  
20 detector.

14. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a  
25 specimen, characterized in that

                  the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment,

30           extracted liquid as an analytical sample is analyzed,

                  a preparatory treatment for condensing the analytical sample according to a column switching method

is performed,

extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

5 the coenzyme Q-10 and the 2-electron reduced form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a detector.

10 15. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that

the specimen comprising at least one of the  
15 coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent as a pretreatment,

extracted liquid as an analytical sample is analyzed,

20 the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is analyzed,

a preparatory treatment for condensing the  
25 analytical sample according to a column switching method is performed,

extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

30 the coenzyme Q-10 and the 2-electron reduced form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a detector.



16. An analysis method for coenzyme Q-10 and a 2-electron reduced form thereof which quantifies coenzyme Q-10 and a 2-electron reduced form thereof comprised in a specimen, characterized in that

5 the specimen comprising at least one of the coenzyme Q-10 and the 2-electron reduced form thereof is extracted with a water-soluble organic solvent comprising isopropyl alcohol as a pretreatment,

10 extracted liquid as an analytical sample is analyzed,

the extracted liquid is stored at a temperature within a range of a melting point of the extracted liquid through room temperature until the extracted liquid is analyzed,

15 a preparatory treatment for condensing the analytical sample according to a column switching method is performed,

20 extracted liquid from a specimen comprising both the coenzyme Q-10 and the 2-electron reduced form thereof is the analytical sample, and

the coenzyme Q-10 and the 2-electron reduced form thereof are separated by a column, further subjected to reduction treatment, and subsequently detected by a detector.

25

17. An analysis system used for analysis of coenzyme Q-10 and a 2-electron reduced form thereof, comprising

30 a liquid-sending mechanism comprising a first series for liquid-sending an analytical sample with a first mobile phase and a second series for liquid-sending only a second mobile phase,

a switching mechanism for switching liquid-

sending routes for the mobile phases of the two series of the liquid-sending mechanism,

a condensation column for receiving the second mobile phase after the mobile phase of the first series is received so as to condense the analytical sample,

a separation column for receiving and separating liquid sent from the condensation column,

a reduction column for receiving and reducing liquid sent from the separation column, and

an electrochemical detector for detection-processing liquid sent from the reduction column.

18. An analysis system used for analysis of coenzyme Q-10 and a 2-electron reduced form thereof, comprising

a liquid-sending mechanism comprising a first series for liquid-sending an analytical sample with a first mobile phase and a second series for liquid-sending only a second mobile phase,

a switching mechanism for switching liquid-sending routes for the mobile phases of the two series of the liquid-sending mechanism,

a condensation column for receiving the second mobile phase after the mobile phase of the first series is received so as to condense the analytical sample,

a separation column for receiving and separating liquid sent from the condensation column,

a reduction column for receiving and reducing liquid sent from the separation column, and

an electrochemical detector for detection-processing liquid sent from the reduction column, and

further comprising an ultraviolet absorption detector as a detector.